

The opinion in support of the decision being entered today was not written  
for publication and is not binding precedent of the Board.

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte FRANCIS A.L. DULLIEN  
and JEAN-CHARLES VILTARD

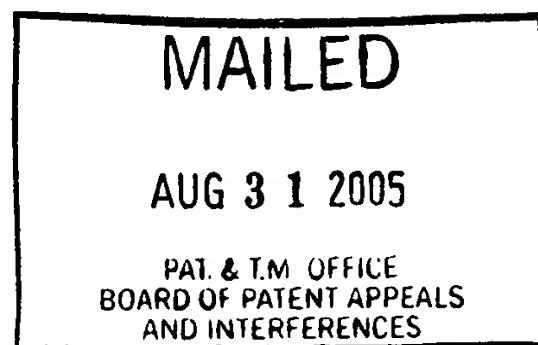
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Appeal No. 2005-1313  
Application No. 09/872,010

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HEARD: July 12, 2005

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Before GARRIS, PAK, and JEFFREY T. SMITH, Administrative Patent Judges.  
JEFFREY T. SMITH, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on appeal from the examiner's final rejection of claims 1 to 4, 7  
to 10 and 13 to 23. Claims 11 and 12 stand withdrawn from consideration. (Brief, p. 2).  
We have jurisdiction under 35 U.S.C. § 134.

### BACKGROUND

The present invention relates to a device and method for eliminating particles contained in a stream of fluid. According to Appellants, "[t]he device and method of the present invention can be classified as turbulent flow dust or particle removers since they rely on turbulent flow of the fluid stream and turbulent eddies carrying the particles to penetrate into stagnant zones to deposit the particles on the surfaces of objects forming the stagnant zones adjacent the flow passage." (Brief, pp. 2-3).

Representative claim 1 appears below:

1. Device for eliminating the particles contained in a stream of fluid comprising a container with a flow channel for the fluid stream in turbulent flow and a plurality of objects oriented adjacent the flow channel, said objects having edges communicating with the stream of fluid and defining between them at least one stagnant space where the particles are recovered; characterized in that the objects are comprised of a fibrous pad, a fibrous mat, or a fibrous fabric disposed along the gas stream such that the pads, fabrics, or fibers furnish additional edges for catching particles.

The Examiner relies on the following references in rejecting the appealed claims:

Brown et al. (Brown)	3,487,610	Jan. 6, 1970
Sheehan	3,545,178	Dec. 8, 1970
Jesernig et al. (Jesernig)	3,808,776	May 7, 1974
McClure	3,938,971	Feb. 17, 1976

Hoon et al. (Hoon)	3,955,947	May 11, 1976
Schmidt, Jr. et al. (Schmidt)	4,289,630	Sep. 15, 1981
Giles (BP '360) British Patent Specification .	632,360	Apr. 10, 1947

Claims 1, 2, 4, 7, 9, 10, 13, 14, 16 -18, 20 and 21 stand rejected under 35 USC 102(b), over BP '360; claims 15 and 19 stand rejected under 35 USC 103(a) over BP '360; claims 3 and 22 stand rejected under 35 USC 103(a) over the combined teachings of BP '360 and Brown; claims 8 and 23 stand rejected under 35 USC 103(a) over the combined teachings of BP '360, Sheehan, Jesernig, McClure, Noon and Schmidt. (Answer, pp. 3-5). We affirm the rejections.

Rather than reiterate the conflicting viewpoints advanced by the Examiner and the Appellants regarding the above-noted rejections, we make reference to the Answer (mailed January 15, 2004) for the Examiner's reasoning in support of the rejection, and to the Brief (filed November 18, 2003) and the Reply Brief (filed March 15, 2004) for the Appellants' arguments there against.

We initially note that Appellants assert that for purposes of appeal that for each ground of rejection the claims do not stand or fall together. (Brief, pp. 4-5). We will consider the claims separately to the extent that they have been argued separately in the brief.

OPINION

Claims 1, 2, 4, 7, 9, 10, 13, 14, 16 -18, 20 and 21 stand rejected 35 U.S.C. 102(b) over BP '360. We affirm.

The Examiner asserts the rejected claims are clearly anticipated by BP '360. The Examiner cites figures 1-5 and specific portions of pages 1, 2, 3 and 5 of BP '360 as disclosing the elements of the claimed invention. (Answer, p. 3).

The subject matter of claims 1, 2, 4, 7, 9, 10, 18, 20 and 21 is directed to a device (apparatus) for eliminating the particles contained in a stream of fluid. The apparatus comprises a container with a flow channel for the fluid stream and a plurality of objects oriented adjacent to the flow channel. The objects have edges in communication with the stream of fluid and defining between them at least one stagnant space where the particles are recovered. The claims specify that the objects comprise a fibrous pad, a fibrous mat, or a fibrous fabric which is disposed along the fluid/gas stream. The pads, fabrics, or fibers furnish additional edges for catching particles. The claims specify that the fluid stream flows in turbulent flow through the flow channel.

"[A]pparatus claims cover what a device is, not what a device does."

*Hewlett-Packard Co. v. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1468, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). Therefore, the patentability of

an apparatus claim depends on the claimed structure, not on the use or purpose of that structure, *Catalina Marketing Int'l Inc. v. Coolsavings.com Inc.*, 289 F.3d 801, 809, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002), or the function or result of that structure. *In re Danly*, 263 F.2d 844, 848, 120 USPQ 528, 531 (CCPA 1959); *In re Gardiner*, 171 F.2d 313, 315-16, 80 USPQ 99, 101 (CCPA 1948).

Appellants are free to recite features of an apparatus either structurally or functionally. See *In re Schreiber*, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997). *In re Swinehart*, 439 F.2d 210, 212, 169 USPQ 226, 228 (CCPA 1971). However, defining an element functionally carries a risk. See *Schreiber*, 128 F.3d at 1478, 44 USPQ2d at 1432, citing *Swinehart*, "where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on."

As stated above, the Examiner has found that the apparatus of BP '360 has the same structural elements as the claimed invention. BP '360 includes a fabric comprising pile surfaces in communication with a stream of fluid for catching particles in the fluid stream. (Page 3; Page 5, lines 50-64; and Figure 3). Appellants have not challenged the Examiner's above factual determinations. Moreover, BP '360 discloses the positioning of the textile fabric in a direction other than the direction of

the flow of the fluid stream so as to facilitate the elimination of particles from a fluid stream in a fluid channel (hollow conduit). (Note page 3). Although Appellants argue that BP '360 does not teach the claimed functional limitations relating to a fluid stream in turbulent flow, we do not find it to be persuasive since BP '360 discloses an apparatus having all of the claimed structural elements as indicated *supra*.

Accordingly, we determine that the Examiner has met the initial burden of establishing a *prima facie* case of unpatentability under section 102. Therefore, the burden has been shifted to Appellants to show that the claimed apparatus differs patentably from that disclosed by BP '360. See *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657-58 (Fed. Cir. 1990); and *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). However, Appellants have not provided sufficient evidence to show that the claimed apparatus is structurally different from that of BP '360 due to the claimed functional limitations relating to turbulent flow.

Appellants argue that "[a]ll of the appealed claims require a flow channel or passage in which the fluid stream flows in turbulent flow. It is submitted the Examiner has not properly interpreted the phrase 'turbulent flow' as used in the subject application." (Brief, p. 5). Appellants further argue "As noted in the McGraw Hill Encyclopedia of Science and Technology, 7th Edition, Volume 18, pages 632-6,<sup>1</sup>. . . .

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<sup>1</sup> A copy of this document was attached to the Request for Reconsideration After Final Rejection filed May 17, 2002 and is attached to Appellants' Brief as Exhibit A.

turbulent flow is a fluid motion in which velocity, pressure and other flow quantities fluctuate irregularly in time and space. In turbulent flow, eddie patterns are complex and flow quantities (including vorticity) fluctuate randomly in time and three-dimensional space.” (Brief, p. 6).

Appellants’ arguments are not persuasive. BP ‘360 discloses removing particles from a fluid stream in flow channels (hollow conduits). BP ‘360 discloses that the channels are designed for effective collection and retention of particles taking into account the speed of flow and pressure. (Page 4). Appellants’ evidence and arguments have not established that the apparatus of BP ‘360 having the claimed structures would not be capable of accommodating a fluid stream in turbulent flow, much less separating at least some particles from a fluid in turbulent flow. That is, the definition provided by Appellants for turbulent flow, quoted above, does not indicate that the apparatus of BP ‘360 could not accommodate such a turbulent fluid stream or remove particles from such a turbulent fluid stream.

Appellants argue that BP ‘360 teaches away from the device and method of the present invention which involves the turbulent flow of the fluid stream. (Brief, pp. 6-7). We do not agree.

It is not disputed that BP ‘360 discloses an apparatus for the collection of particles from a fluid stream. As stated above, BP ‘360 recognizes that the apparatus

is designed considering the speed, flow and pressure of the fluid stream. BP '360 also recognizes that particles could be removed from fluid streams having some turbulence<sup>2</sup> by retaining these particles in the fabric liner through the use of vortices opposite from the longitudinal center of the channel. (Page 8, lines 25-33 and 68-80). The claims on appeal do not specify the amount of particles that must be removed from the fluid stream or the degree of turbulence in the fluid stream.

Appellants argue "[t]he fact that the inventor of Britain 632,630 theorizes that there may a small component of velocity of right angles to the general flow or eddies or vortex flow, does not necessarily mean that the flow is turbulent flow." (Brief, p. 7). Appellants appear to be arguing that there must be extreme changes in the fluid stream to have turbulent flow. With respect to the method claims on appeal, this position is not consistent with the definition of turbulent flow provided by Appellants as indicated *supra*. Specifically, the definition referred to by Appellants only requires that there must be some irregular fluctuation in the velocity, pressure and other flow quantities. It does not indicate a degree or amount of irregular fluctuation. Moreover, with respect to the apparatus claims on appeal, we note that Appellants do not argue that this definition results in a patentably different apparatus.

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<sup>2</sup> BP '360 describes the fluid stream as "substantially devoid of turbulence." This language does not preclude the presence of some turbulence in the fluid stream.



Appellants' arguments regarding claims 13 and 14 are not persuasive. As stated above, BP '360 also recognizes that particles are retained the fabric liner through the use of vortices opposite from the longitudinal center of the channel.

BP '360 describes hallow conduits for the fluid stream that are completely surrounded by the textile fabric. (Note Figure 3). Thus, Appellants' arguments regarding claims 16, 17 and 20 are not persuasive.

Claims 15 and 19 stand rejected under 35 U.S.C. 103(a) over BP '360. We affirm.

Appellants argue that the Examiner has not supported the allegation that a person of ordinary skill in the art would have arrived at optimal workable porosity levels of the pads of the reference by way of routine experimentation. (Brief, 12).

BP '360 describes hallow conduits for the fluid stream that are completely surrounded by the textile fabric for the removal of particles. A person of ordinary skill in the art would have sufficient skill to select the appropriate porosity for achieving the goals of the BP '360 reference. The porosity of the textile fabric is a result effective variable that would affect the size to the particles removed. The adjustment of such a result effective variable would have been obvious to a person of ordinary skill in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

Claims 3 and 22 stand rejected over the combined teachings of BP '360 and Brown. We affirm.

The Examiner relies on Brown as disclosing an apparatus for removing particles from a fluid stream similar to that of the BP '360 wherein the elements are electrostatically charged. (Answer, pp. 4-5).

Appellants argue that the device of Brown is quite different from that of BP '360. (Brief, pp. 12-13).

Appellants' arguments are not persuasive. BP '360 and Brown describe apparatus that extract particles from a fluid stream. Brown, column 1 lines 24 to 39, discloses that static electrically charged articles remove both charged and uncharged particles from gas streams. A person of ordinary skill in the art would have reasonably expected that the use of static electrically charged textile in the apparatus of BP '360 would also remove charged and uncharged particles from the fluid stream. "For obviousness under § 103, all that is required is a reasonable expectation of success." *In re O'Farrell*, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). In light of the foregoing and for the reasons expressed in the Answer, it is our determination that the Examiner has established a *prima facie* case of obviousness with respect to the argued claims on appeal.

Claims 8 and 23 stand rejected under 35 U.S.C. 103(a) over the combined teachings of BP '360 and any one of Sheenan, Jessernig, McClure, Hoon and Schmidt.

The Examiner relies on the Sheehan, Jesernig, McClure, Hoon and Schmidt, patents for their teachings of shaker means for periodically shaking filter elements to remove particles therefrom. Appellants do not specifically challenge the obviousness of using shaker means in the apparatus and method taught by BP '360. Rather, Appellants argue that even if the secondary references disclose the features relied upon by the Examiner and are combinable with BP '360, the combined teachings would not have suggested the presently claimed invention because the secondary references do not remedy any of the basic deficiencies of BP '360. (Brief, pp. 14-15). Thus, for the reasons already presented above regarding the independent claims 1, 13, 14 and 18, and the reasons presented by the Examiner in the Answer, we will uphold the rejection.

#### CONCLUSION

For the foregoing reasons and those set forth in the Answer, giving due weight to Appellants' arguments, we determine that the preponderance of evidence weighs in favor of the Examiner's rejections. Accordingly, the Examiner's rejections under 35 U.S.C. §§ 102(b) and 103(a) are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(iv)(effective Sep. 13, 2004; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sep. 7, 2004)).

**Affirmed**

**Administrative Patent Judge**



**CHUNG K. PAK**

**Administrative Patent Judge**

  
JEFFREY T. SMITH  
Administrative Patent Judge

**BOARD OF PATENT  
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ANTONELLI, TERRY, STOUT & KRAUS, L.L.P.  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-9889